What is claimed is:

1. An isolated, purified or recombinant antithrombosis enzyme having the following characteristics:

the molecular weight of said enzyme is between about 28 kD and about 32 kD when analyzed by polyacrylamide gel electrophoresis,

the aspartic acid content of said enzyme is between about 2% and about 5%,

the glutamic acid content of said enzyme is between about 2% and about 5%, and

said enzyme hydrolyzes fibrin, dissolves blood clots, and prevents platelet aggregation.

2. The enzyme of claim 1 which hydrolyzes fibrin at a level of no less than one fibrinolytic activity unit per mg of said enzyme.

3. The enzyme of claim 1 which hydrolyzes fibrin at a level of about one to about three fibrinolytic activity units per mg of said enzyme.

4. The enzyme of claim 1 which is isolated or purified from the venom of Southern-Anhui *Agkistrodon acutus*.

5. The enzyme of claim 1 which inhibits human platelet aggregation induced by a fibrin agonist selected from the group consisting of ADP, epinephrine and thrombin.

6. The enzyme of claim 1, wherein said enzyme has nondetectable level of casein hydrolysis activity.

7. The enzyme of claim 1, wherein said enzyme comprises Ca^{++}.

8. The enzyme of claim 1, wherein the amino terminus of said enzyme is aspartic acid.

9. The enzyme of claim 1 comprising two polypeptide chains of about 14 kD to about 16 kD when analyzed by polyacrylamide gel electrophoresis.

10. The enzyme of claim 9 wherein one of said two polypeptide chains comprises an amino acid sequence, from left to right in the direction from the amino terminus to the carboxy terminus, represented by the formula:

Asp-Cys-Ser-Ser-Asp-Trp-Ser-Ser-Tyr-Glu-Gly-His-Cys-Tyr-Lys-Val-Phe-Lys-Gln-Ser-Lys-Thr-Trp-Thr-Asp-Ala-Glu-Ser-Phe-.

11. The enzyme of claim 9 wherein one of said two polypeptide chains comprises an amino acid sequence, from left to right in the direction from the amino terminus to the carboxy terminus, represented by the formula:

Asp-Cys-Pro-Ser-Glu-Trp-Ser-Ser-Tyr-Glu-Gly-Phe-Cys-Tyr-Lys-Pro-Phe-.

12. The enzyme of claim 9 wherein one of said two polypeptide chains comprises an amino acid sequence of SEQ ID NO: 2.

13. The enzyme of claim 1 which is crystallized.

14. An isolated, purified or recombinant polypeptide comprising no less than 20 contiguous amino acids from SEQ ID NO: 2.

15. An isolated, purified or enriched recombinant nucleic acid comprising no less than 60 contiguous nucleotides from SEQ ID NO: 1 or its fully complementary strand of the same length and a promoter effective to initiate transcription of said contiguous nucleotides in a host cell.

16. An isolated, purified, or recombinant polypeptide comprising SEQ ID NO: 2.

17. An isolated, purified or enriched recombinant nucleic acid comprising a contiguous nucleic acid sequence encoding SEQ ID NO: 2 and a promoter effective to initiate transcription of said contiguous nucleic acid sequence in a host cell.

18. An isolated, purified or enriched recombinant nucleic acid comprising SEQ ID NO: 1 or its fully complementary strand of

the same length and a promoter effective to initiate transcription of said contiguous nucleotides in a host cell.

19. A pharmaceutical composition comprising a pharmaceutically effective amount of an enzyme of claim 1 and a pharmaceutically acceptable carrier.

20. A method for dissolving a thrombus in a mammal, comprising the step of administering to said mammal a pharmaceutically effective amount of an enzyme of claim 1.

21. A method for treating or preventing a thrombosis related disease in a mammal, comprising the step of administering to said mammal a pharmaceutically effective amount of an enzyme of claim 1.

22. The method of claim 21, wherein said thrombosis related disease is selected from the group consisting of myocardial infarction, restenosis, unstable angina and cerebral thrombosis.